

JPRS 78859

28 August 1981

USSR Report

CONSTRUCTION AND EQUIPMENT

No. 44

FBIS

FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service (NTIS), Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semimonthly by the NTIS, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available through Bell & Howell, Old Mansfield Road, Wooster, Ohio, 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

Soviet books and journal articles displaying a copyright notice are reproduced and sold by NTIS with permission of the copyright agency of the Soviet Union. Permission for further reproduction must be obtained from copyright owner.

28 August 1981

USSR REPORT
CONSTRUCTION AND EQUIPMENT

No. 44

CONTENTS

CONSTRUCTION

UkSSR Gosstroy Achievements, Projections Discussed (STROITEL'STVO I ARKHITEKTURA, Jun 81)	1
Analysis of Initial Commodity Construction Output Volume Results (V. Dulich; VESTNIK STATISTIKI, Jun 81)	5
Ways of Improving Construction Management Discussed (G. Lubenets; STROITEL'NAYA GAZETA, 15 May 81)	10
Necessity of Consolidating Manpower in Construction Discussed (K. Rozykulyyev; TURKMENSKAYA ISKRA, 24 May 81)	14
Deficiencies in Building Kishinev University Addition Analyzed (D. Norkin; SOVETSKAYA MOLDAVIYA, 26 May 81)	18
Deficiencies in Construction Quality Control Analyzed (V. Sudzhyus; SOVETSKAYA LITVA, 27 May 81)	22
Inaccuracies in Reporting Losses of Man-Hours Detailed (M. Yuz; SOVETSKAYA LITVA, 28 May 81)	25
Resources Allocation Discussed (E. I. Shilov; S. Ye. Kruglyak; STROITEL'STVO I ARKHITEKTURA, Jun 81)	28
Briefs Pumps for AESs	32

CONSTRUCTION

UKSSR GOSSTROY ACHIEVEMENTS, PROJECTIONS DISCUSSED

Kiev STROITEL'STVO I ARKHITEKTURA in Russian No 6, Jun 81 (signed to press 2 Jun 81)
pp 32-33

[Text] The committee has reviewed the results of fulfillment of the 1980 State Plan for New Equipment and Experimental Construction by Ukrainian SSR construction ministries and departments.

It was noted that the construction ministries and departments did a certain amount of work in 1980 on raising the technical level of construction production. The proportion of fully prefabricated buildings and facilities built reached 56.6 percent and that of large-panel and prefabricated-block housing construction -- 59.1 percent, including 55.8 percent using new series of standard designs, and the manufacture of prefabricated, prestressed reinforced concrete components -- 28.6 percent. As compared with 1979, the volume of fully prefabricated construction of production buildings and agricultural facilities increased 5.2 percent, that of industrial house building using new series of standard designs -- 9.3 percent, and large-panel installation of roofs for industrial buildings and progressive types of piles -- 10.8 percent. The labor-intensiveness of this work was reduced by 1.4 million man-days through fulfillment of assignments on introducing new equipment into construction, making it possible to obtain an economic impact totalling 57 million rubles.

At the same time, there are still a number of shortcomings in the work of construction ministry and department organizations and enterprises in terms of increasing the industrialization of construction production and the level of factory readiness of components and materials, as well as in terms of carrying out experimental construction.

For the Ukrainian SSR as a whole, 112 of the 119 assignments of the State New Equipment Plan, or 94 percent, were met. Only the Ukrainian SSR Ministry of Installation and Special Construction, Ukrainian SSR Ministry of Reclamation and Water Management, Ukrainian SSR Ministry of Road Construction and Utilization and the Glavkiyevgorstroy met the plan in full.

Experimental construction was done at an inadequately well-organized level. Branch ministries did not make full use of the funds allocated in 1980 for developing and introducing new equipment, and the economic incentives fund for mastering and introducing new equipment was used by an average of only 60-85 percent.

The committee recommended that the Ukrainian SSR Ministry of Industrial Construction: expand the use of "on span" slabs, multistory building frames with a reinforced

column grid, lightweight 30-36 meter folded roofs and steel-reinforced girders, 12-meter wall panels and components made of high-strength, lightweight concrete; the use of dry gypsum plaster of better quality, in an amount of 200,000 m², in projects being built, if the client agrees; increasing the proportion of finishing work done by mechanized means using the "Salyut" station and colored spackling aggregates; the completion this year of experimental construction of a 16-story monolithic reinforced concrete house in Khmel'nitskiy and steps to improve this type of construction organization by the ministry.

It is recommended that the Ukrainian SSR Ministry of Construction of Heavy Industry Enterprises take steps to ensure fulfillment of the 1981 assignment for introducing plastic pipe into construction, which is 2,500 tons; organize the introduction of 3x18 meter channel flooring in light industry projects being built; use nondestructive reinforced concrete component quality control methods at construction industry enterprises; accelerate the introduction of explosion-packing of sinkhole ground at construction projects in Zaporozhskaya and Dnepropetrovskaya oblasts.

It is recommended that the Ukrainian SSR Ministry of Rural Construction ensure the complete mastering of planned capacities of the Odessa, Voroshilevgrad and Melitopol' house-building enterprises in the first half of the current year; take steps to master the planned capacity of the Korostyshevskiy Pilot Wood Processing Plant and manufacture 3,500 m³ of laminated wood support components as anticipated by the assignment; review the status of experimental construction in ministry organizations based on 1980 work results and approve the schedule for installing these projects, ensuring supplies of material-technical and labor resources for them.

The committee instructed the NIISP [Scientific Research Institute of Construction Industry], NIISK [Scientific Research Institute of Construction Components], NIASS [Scientific Research Institute of Asbestos-Cement Construction] and Ukrniipgrazhdansel'stroy [not further identified] to finish concluding 1981-1985 creative cooperation agreements with construction ministries and the Glavkiyevgorstroy [Main Administration for Housing and Civil Construction of the Kiev Gorispolkom] and render them scientific and technical assistance in introducing completed scientific research and new equipment assignments into construction.

The committee obligated the NIISP and NIISK to improve their work on rendering construction organizations methods assistance in economic substantiation of the effectiveness of utilizing advanced technology, progressive components and new materials; take steps to introduce scientific research results widely and render technical assistance through the introduction bureaus of the NIISK and NIISP's PKB [planning-design bureau] (Ukrainian SSR Ministry of Industrial Construction and Ukrainian SSR Ministry of Installation and Special Construction) in installing 132,000 m³ of drilled and driven pile foundation components and the Ukrainian SSR Ministry of Industrial Construction and Ukrainian SSR Ministry of Rural Construction -- 500,000 m² of mastic roofing and waterproofing material.

It is recommended that the USSR Ministry of Ferrous Metallurgy's Giprometz [State All-Union Institute for Planning Metallurgical Plants], the Donetsk Promstroyniiprojekt [not further identified] and the Pridneprovsk and Kiev Promstroyproyekt's [not further identified] of the USSR Gosstroy use in designs for building and renovating buildings and facilities for the Ukrainian SSR Ministry of Construction of Heavy Industry Enterprises progressive construction components and materials made of high-

strength concrete and steel, efficient rolled metal shapes, industrial partitions, 3x18 and 3x24 meter roof slabs, non-roll housing roofing, 1.5 x 2 meter multicavity slabs, plastic pipe, and also the junction method of planning and organizing construction.

The committee reviewed results of ministry and department fulfillment of the plan for comprehensive mechanization of construction and installation work in 1980 and the 1981 tasks in terms of further raising the level of mechanization.

It was noted that, during the 10th Five-Year Plan, the republic fleet of basic construction machinery was supplemented with highly productive new equipment and grew by an average of 11 percent.

Republic construction ministries and departments carried out a number of measures aimed at raising the level of construction mechanization and using the machinery better in 1980. Construction ministry and department enterprises manufactured and sent to construction sites more than 15,000 means of mechanization, attachments and equipment, including more than 500 being newly utilized. About 500 specialized brigades were provided with complete sets of technological equipment. More than 11,000 construction vehicle operators were trained.

Implementation of those plans and measures enabled us to raise the level of comprehensive mechanization of the main types of construction-installation work and to reduce the amount of work done by hand by an average of 25-30 percent per million rubles of construction-installation work as compared with 1975. The level of automation was increased in manufacturing slurry and concrete by 6.6 and 4.7 percent, respectively, as compared with 1975. The level of mechanization in roll roofing material installation was 47.2 percent, as compared with 21.1 percent at the start of the five-year plan.

At the same time, a number of ministries and departments failed to meet the assignment for comprehensive mechanization and failed to ensure labor productivity growth in the established amount. Of the 15 plan assignments, only seven were met by the Ukrainian SSR Ministry of Rural Construction, Ukrainian SSR Ministry of Construction of Heavy Industry Enterprises and Ukrainian SSR Ministry of Industrial Construction, and only eight were met by the Ukrainian SSR Ministry of Installation and Special Construction.

Due to the low shift index of construction organization work, the use of construction machinery in terms of time did not improve. The construction machinery use coefficient was 0.61 for the republic as a whole for the year. In a number of organizations, average daily equipment operation time decreased (excavators, scrapers, bulldozers, tower cranes and air-tire automobiles for the Ukrainian SSR Ministry of Construction of Heavy Industry Enterprises and bulldozers for the Ukrainian SSR Ministry of Installation and Special Construction).

Ministries and departments have been slow to solve problems of developing the centralized repair of construction machinery, concentrating and specializing repairs, and they have not paid proper attention to developing operating-center capacities. The necessary steps have not been taken to introduce a progressive system of planned preventive maintenance for construction machinery, which has led to high labor intensiveness in servicing and repair, to high above-norm machinery idle time.

Imperfection in the organizational form of machine fleet management has had a negative effect on all indicators of construction equipment use in the Ukrainian SSR Ministry of Installation and Special Construction.

Labor productivity growth is being retarded in considerable measure by the high volume of construction-installation work being done by hand (finishing, roofing, concrete work, and others). The question of providing specialized brigades with technological sets of mechanization equipment, tools, attachments and implements therefore takes on great importance.

In a majority of construction organizations, the operation of means of small-scale mechanization and tools is at an inadequate level, and only 30-35 percent of the specialized brigades in the Ukrainian SSR Ministry of Industrial Construction and Ukrainian SSR Ministry of Rural Construction are equipped with complete technological sets.

The committee recommended that branch ministries and departments work out and implement measures needed to ensure resolution of the problems of increasing the effectiveness of work mechanization, lowering manual labor expenditures and improving the use of construction equipment; improve the organization and technology of mechanized work; continue concentrating machinery in mechanization trusts and administrations; improve the organization of tool services at construction sites and concentrate mechanized tools, construction-finishing and other machinery in specialized small-scale mechanization administrations; improve mechanization trust and administration planning and equipment use calculations; take steps to eliminate existing shortcomings in servicing and repairing automatic concrete and slurry mixers and machinery with automatic control, with a view towards creating technical services to operate them.

The committee approved organizational-technical measures to ensure fulfillment of the 1981 plan for the comprehensive mechanization and automation of construction and installation work. They anticipate: disseminating leading experience in the area of construction production mechanization; equipping specialized brigades with technological sets of means of mechanization, implements and tools; introducing machinery with special mounted equipment, attachments and fittings which facilitate reducing the use of manual labor; manufacturing 9,500 units of means of mechanization and equipment and 352 new machines at enterprises of Ukrainian SSR construction ministries and departments; train 11,400 machine operators; build and put into operation capacities for the repair and servicing of construction machinery; manufacture or rebuild at repair enterprises 9,200,000 rubles worth of spare parts for road-building machinery; equip mechanization administrations with mobile means for servicing and transporting 475 machines.

The Ukrainian Gosstroy's NIISP is instructed to continue working on generalizing leading experience in construction-installation work and increasing its assistance to construction ministries and departments on holding schools of leading experience, seminars, inspection contests; generalize the main developments of construction ministries aimed at improving construction technology and further raising the level of production mechanization and automation; based on experience at the Khar'kov DSK-1 [house-building combine] in introducing concrete mixture ASUTP [automated control system for technological processes], develop standard resolutions using concrete ASUTP, jointly with the "Veda" production association, organize a 1981 seminar to study modern systems for controlling the preparation of concrete mixtures and render constructions practical assistance in mastering the new automation devices.

COPYRIGHT: Izdatel'stvo "Budivel'nik", "Stroitel'stvo i arkhitektura", 1981

11052

CSO: 1821/106

CONSTRUCTION

ANALYSIS OF INITIAL COMMODITY CONSTRUCTION OUTPUT VOLUME RESULTS

Moscow VESTNIK STATISTIKI in Russian No 6, Jun 81 (signed to press 20 May 81) pp 17-21

[Article by V. Dulich: "On Indicators for Evaluating the Activity of Construction-Installation Organizations"]

[Text] The "Basic Directions of USSR Economic and Social Development for 1981-1985 and Up to 1990" anticipate the introduction of a complex of measures worked out to improve the economic mechanism and strengthen its influence on improving efficiency and work quality in the 11th Five-Year Plan. Such measures have been worked out and approved by the CPSU Central Committee and USSR Council of Ministers decree of 12 July 1979. Among them, accelerating the start-up of production capacities and projects and increasing capital investment effectiveness are of great importance.

According to the indicated decree, beginning in 1981, the system of planning construction production and evaluating the results of construction-installation organization production-economic activity have changed qualitatively and changes have been made in the principles for calculating work done. The economic stimulation of construction installation organizations is universally based now on results in meeting assignments in terms of putting production capacities and projects into operation, carrying out the plan in terms of commodity construction output, labor productivity growth and profit.¹

The USSR Central Statistical Administration has summed up the initial results of the practical introduction of planning indicators in terms of commodity construction output. They show that construction organizations are interested in concentrating labor, material and technical resources at start-up projects and, in the final analysis, in reducing the time needed to put up buildings and facilities and the number of projects being built at one time, inasmuch as the material incentives for and financial status of the organizations depend fully on the end results of their work.

At the same time, an analysis of the reporting data obtained shows that a number of ministries and departments carrying out construction and installation work have communicated the plan in terms of commodity construction output to subordinate organizations in violation of the "Temporary Methods Instructions on Planning and Recording

1. The importance of these indicators in increasing capital construction efficiency and the methodology for planning and recording them are presented in VESTNIK STATISTIKI, No 8, 1980, pp 30-36.

Commodity Construction Output."¹ Thus, the total volume of commodity construction output was approved for a majority of the organizations of the Ministry of Reclamation and Water Management, Ministry of Light Industry, Ministry of Construction of Petroleum and Gas Industry Enterprises, Ministry of Transport Construction, Ministry of Gas Industry and the Union republic councils of ministers as a sum of the amount of output produced by their own efforts and by recruited organizations, that is, in the tradition of planning the gross volume of contract work.

Under these methods instructions, the total amount of commodity construction output includes the full estimated cost of construction-installation work on enterprises released to clients, their lines and start-up complexes ready to produce output or render services under general and direct agreement, capital repair work, work under subcontract agreements and other contract work, including stages and complexes built for these projects and released to clients prior to 1 January 1981. The volume of commodity construction output produced by their own efforts is determined by excluding from the total volume of commodity construction output work done and released prior to January 1981 and excluding from the remaining work volume that done by organizations of other ministries and departments. Consideration is also given to the volume of commodity construction output done by some construction organizations for other organizations of one's own ministry under subcontract agreement (internal subcontract).

Let's use a hypothetical example. "Promstroy" trust's first quarter plan anticipates releasing one project, No 1, with an estimated construction-installation cost of 1,800,000 rubles in state capital investments to the client. Prior to 1 January 1981, work stages totalling 1,400,000 rubles have been done and released to the client. In the first quarter, recruited organizations of other ministries and departments are to do 150,000 rubles worth of work on the project. Moreover, SMU No 4 [construction-installation administration], which is part of the trust, must do 60,000 rubles worth of work under subcontract agreements with SMU No 2 of another trust in that same main administration. It is a complex of earth-moving work on project No 2 and must be released to its general contractor (SMU No 2). Under the plan, SMU No 1 must release to the client 400,000 rubles worth of capital repair work on the main structure.

In the "Promstroy" trust's report, the total amount of commodity construction output is 2,200,000 rubles (1,800,000 rubles + 400,000 rubles), but the volume of commodity construction output done by its own means is 710,000 rubles (1,800,000 rubles - 1.4 million rubles - 150,000 rubles + 400,000 rubles + 60,000 rubles). The volume of commodity construction output in terms of enterprises and projects released to the client is 1,800,000 rubles.

The volume of work done at commodity construction output projects by recruited organizations is not planned separately or recorded, but is included in the total volume of commodity construction output done under general agreements.

In violation of the "Temporary Methods Instructions," individual specialized organizations of the Ministry of Construction of Petroleum and Gas Industry Enterprises and

1. "Temporary Methods Instructions on Planning Commodity Construction Output," approved by the Gosplan on 24 April 1981, and instructions on recording it, presented in an instruction on compiling capital construction reporting which was approved by the USSR Central Statistical Administration on 22 December 1980.

the Ministry of Transport Construction were set a plan not for total commodity construction output volume, but only for the volume done using their own efforts. Statistics administrations must analyze plan indicators carefully and report promptly to local supervisory agencies and superior organizations on violations revealed and assure that steps are taken to bring them into conformity with the requirements of the methods instructions on planning commodity construction output.

The CPSU Central Committee and USSR Council of Ministers decree of 12 July 1979 indicates the necessity of planning the even start-up of projects throughout the year. However, individual ministries and departments have not taken the necessary steps to raise the level of smoothness in planning the start-up of projects and commodity construction output by quarter. Thus, the commodity construction output volume for the first quarter in the 1981 annual plan is five percent for organizations of the USSR Ministry of Construction of Heavy Industry Enterprises, four percent for the Ministry of Construction of Petroleum and Gas Industry Enterprises and three percent for the Ministry of Transport Construction and the Ministry of Rural Construction. About 50 percent of the capacities, projects and volumes of commodity construction output put into operation is accounted for by the fourth quarter. This complicates the work of the builders. Quarterly plan fulfillment in January-February was 44 percent for the national economy as a whole, 28 percent for organizations of the USSR Ministry of Industrial Construction, 32 percent for the USSR Ministry of Construction, 55 percent for the Ministry of Transport Construction, 106 percent for the USSR Ministry of Rural Construction and 107 percent for the Ministry of Electrification and Power Engineering. For individual construction-installation trusts, the actual volume of commodity construction output during the first two months exceeded the planned volume for the first quarter two- to three-fold or more. The inflated plan fulfillment occurred, first, because of an absence of precise instructions on ensuring the comparability of actual commodity construction output volume and plans for the first quarter. The plan for this period was approved at the end of last year without consideration of the expected plan fulfillment for putting production capacities and projects into operation. The estimated cost of projects scheduled for start-up in the fourth quarter of last year but not put into operation on schedule and the volume of construction-installation work left undone at projects released for operation in 1980 turned out not to have been included in the commodity construction output plan for the first quarter of 1981. A significant portion of that volume turns out to have been done in the first quarter and was included in the actual commodity construction output volume, paid for by the client, the profit received and the economic incentives funds created -- all in the first quarter of this year.

In our opinion, with a view towards ensuring the comparability of actual commodity construction output volume and the plan for projects and work transferred from the fourth quarter of the preceding year and not included in the plan for the first quarter of the next (prior to making adjustments based on plan fulfillment results for the preceding year), it is appropriate to include work done at these projects and included in actual fulfillment for the reporting period in an equal amount in the plan for this period as well.

A second cause of the gap between planned and reported data is violation of the established procedure for determining actual commodity construction output volume. According to the instruction on the procedure for compiling the statistical report on capital construction which was approved by the USSR Central Statistical Administration on 22 December 1980, commodity construction output volume includes:

estimated cost of construction-installation work for enterprises, lines, start-up complexes and projects released to clients through all sources of financing, including kolkhoz funds, on the basis of a signed document from the state acceptance commission that they have been accepted for operation;

cost of capital repair work after it is completely finished for individual projects on the basis of a client acceptance document for capital repair work on individual buildings and facilities;

cost of special construction-installation work complexes done under subcontract agreements at start-up complexes and projects released to general contractors on the basis of acceptance documents for work done, regardless of scheduled release of these enterprises, start-up complexes and projects by the general contractor for operation;

cost of work done to eliminate unfinished work at production projects, as well as work to provide public amenities to sites being developed, on the basis of an acceptance document for work done;

estimated cost of construction-installation work on erecting temporary titles-list buildings and structures on the basis of a signed acceptance document from the working commission. At the time the report is drawn up, calculations submitted for payment for work done are not mandatory.

Individual construction-installation organizations have included in the actual volume of commodity construction output the cost of construction-installation work on projects released in the fourth quarter but paid for in January-February. This is in violation of the above procedure. Such errors were permitted by individual organizations of the USSR Ministry of Industrial Construction, USSR Ministry of Rural Construction, USSR Ministry of Construction and others.

It is the task of state statistics agencies, and especially of workers in capital construction statistics, to ensure the reliability of summary reporting data on plan fulfillment in terms of the new indicator of commodity construction output and to exercise logical and arithmetical supervision of the reports of construction-installation organizations.

In this regard, it should be borne in mind that, according to the "Temporary Methods Instructions," the specifics of determining the composition of commodity construction output are established for individual types of specialized construction and unique projects by the USSR Gosplan upon representation by the corresponding USSR ministries and departments and Union republic councils of ministers, with the concurrence of the USSR Gosstroy, USSR Ministry of Finance, USSR Srobybank and USSR Central Statistical Administration.

In 1980, the specifics of determining the composition of commodity construction output were reviewed for capital mining work, and it was established that the composition of the commodity construction output for the indicator work is to be determined by the cost of work on individual completed structural elements and types of work and portions thereof on the basis of a single valuation, given acceptance documents drawn up once a quarter. This year, the USSR Gosplan, jointly with the USSR Gosstroy, USSR Srobybank, USSR Ministry of Finance and USSR Central Statistical Administration, has determined the specifics of the composition of commodity construction output for transport construction, in which they have permitted the inclusion in commodity construction output of the estimated cost of the complex of construction-installation work which ensures putting new railroad lines of individual sectors of lines into temporary operation at the level anticipated in an approved technical plan. The estimated

cost of construction-installation work in this complex is included in the actual commodity construction output volume on the basis of a temporary operation acceptance document drawn up under the established procedure.

It has also been established that the commodity construction output volume of specialized organizations doing earthmoving work by hydromechanization under subcontractor agreements which ensure a work front for general contractors or for other subcontractor organizations until the hydromechanized earthmoving work is completely finished at enterprises, lines, start-up complexes or projects can be determined as an exception to the estimated cost of the complex of hydromechanized work ensuring the needed work front for a general contractor in accordance with the construction organization plan which has been released to the general contractor.

It should be borne in mind when analyzing and verifying the reliability of data on commodity construction output plan fulfillment that the estimated cost of construction-installation work for construction projects being built on a compensation basis and for housing and civil-construction projects is included in the actual commodity construction output volume on the basis of a document accepting them for operation from the state acceptance commission, approved under the established procedure, but for construction projects being built using sets of imported equipment, it is included on the basis of a working commission document that the building or facility approved by the client ministry (department) has been accepted.

Workers in state statistics agencies must attentively study questions of the methodology of planning and recording commodity construction output and must ensure that the new capital construction indicators outlined in the CPSU Central Committee and USSR Council of Ministers decree of 12 July 1979 are correctly reflected in the reporting of construction-installation organizations and enterprises and that of developer organizations.

COPYRIGHT: Izdatel'stvo "Finansy i statistika", 1981

11052

CSO: 1821/109

CONSTRUCTION

WAYS OF IMPROVING CONSTRUCTION MANAGEMENT DISCUSSED

Moscow STROITEL'NAYA GAZETA in Russian 15 May 81 p 2

[Article by G. Lubenets, UkSSR minister of construction of heavy industry enterprises: "Moving Toward Firms"]

[Text] In the "Principal Directions for Economic and Social Growth in the USSR for the Years 1981 to 1985 and for the Period to 1990" a program was formulated "to complete the development and realization of general management schemes in capital construction, to precisely define the spheres of activity for construction ministries, to reduce the number of links in the management chain and the number of small independent organizations, to develop a network of construction and installation production associations that completely carry out construction work and turn over capacities and structures for use."

In publishing the article by G. Lubenets, Ukrainian SSR minister of construction of heavy industry enterprises, the editorial board invites readers to take part in discussing the urgent problems of improving the sector's management system. Specific, sound proposals for simplifying the structure and for precisely defining the territorial spheres of activity and the reasonable limits of specialization will help us to compile our own kind of "Management Code."

And so the following fundamental proposal is suggested: to consolidate the primary production link--associations and combines; to transfer to "turnkey" methods of operating when erecting structures intended for housing and civil use and to place a number of specialized installation organizations under the direct jurisdiction of these associations.

We await new proposals in the "Management Code."

The department of Economics and the Organization of Labor "SG"
[Soviet State]

The last five-year plan became an important stage in improving the management mechanism for builders of heavy industry enterprises in the Ukraine. Our organizations were one of the first in the country to transfer to planning and evaluating based on construction commodity production and to being fully self-supporting which made it possible

to substantially strengthen planning and performance discipline and to achieve greater end results. About 800 new and reconstructed installations of industrial importance were put into operation. They are providing an increase in capacities for extracting 57.1 million tons of iron ore, for producing 20 million tons of rolled metal, 20.5 million tons of iron ore concentrate and 1.35 million tons of ammonia per year. All of the capacities that were planned for producing steel, agglomerate, ferromanganese, mineral fertilizers and group "B" structures as well as schools, children's preschool institutions and professional and technical schools were put into operation.

Together with adopting the key economic factors an improvement in the management structure and an improvement in its efficiency exerted a noticeable influence on the work of sector's collectives. We have formed a four link structure--the USSR Ministry of Construction of Heavy Industry Enterprises--the UkSSR Ministry of Construction of Heavy Industry Enterprises--the combine--the trust (or housing construction combines and specialized construction administrations under the direct jurisdiction of the combine). Trusts and administrations have the right to have a juridical person and the Statute Concerning the Socialist State Production Enterprise applies to them.

This management structure fully meets the operating conditions of our organizations. The ministry annually completes more than 1.5 billion rubles worth of construction and installation work in six industrially growing oblasts of the republic--Voroshilovgradskaya, Dnepropetrovskaya, Donetskaya, Zaporozhskaya, Kirovogradskaya, and Poltavskaya. Every year 260 to 280 million rubles are acquired in Krivoy Rog and the rayons adjacent to it and up to 600 million rubles in Dnepropetrovskaya.

It is inconceivable for the resources of uncoordinated construction organizations to complete such volumes of work. It can be accomplished only by means of concentrating manpower and resources into a unified whole, into a powerful construction association which we call a combine that operates in accordance with the Statute Concerning the Construction and Installation Production Association approved by a USSR Gosstroy decree dated 6 November 1979.

And so, beginning with the conditions for construction and concentrating it in certain oblasts, a unique structure of management agencies was formed in the Ukraine. Can it be simplified? There is no question about the two highest links--the union and republic ministries. Trusts and specialized construction administrations are the two basic production links. The middle link--the combines--remains. If they are liquidated then 67 trusts, 12 housing construction combines and 20 construction administrations that are now directly subordinate to 13 combines will be transferred to the direct jurisdiction of the republic ministry. I am not even talking about other institutions and organizations--housing and municipal bureaus, complete production and technological supply administrations, railroad shops.... Obviously it will not be within the power of the ministry to directly manage such a huge number of dissimilar organizations and there is no need to do this.

From experience it is well known that liquidating one link in certain industrial ministries worsened the sector's management ability which was immediately reflected in the economic indicators. And the point being made here is about stable production with the technology that has been installed working on full cost accounting.

But just what is a combine? They were created in their time for erecting large industrial complexes. By the nature of things they are conceived as cost accounting territorial construction administrations having specialized trusts and subsidiary and auxiliary organizations included in them. From 3 to 10 trusts, housing construction combines and specialized administrations are under the jurisdiction of a combine as a rule. Today, a single repair base, and a municipal and warehouse industry have been formed in the combines and mechanization trusts with specialized sections and construction industry production associations are being created. This makes it possible to completely provide trusts and administrations with experienced personnel, material and technical resources and mechanisms and to shift them around, concentrate them quickly at important starting structures, and coordinate the operations of their own and other subcontract subdivisions.

For example, two construction and installation trusts are part of the Zaporozh'ye Housing Construction Combine--the Zaporozh'ye Housing Construction Trust and the Zaporozh'ye Civil Construction Trust--a housing construction combine, a mechanization administration, a specialized administration--the Zaporozh'ye Special Construction Administration--and also a production association "Zaporozhzhilstroydetal'." A motorized production trust is attached to it and services it. Such a structure plus new management methods and operating on full cost accounting made it possible for the combine's collective to continually overfulfill the state program. The programs for 1978 to 1980 for construction commodity production were overfulfilled by 3.8 percent and for putting housing into use by 0.5 percent. The plan for last year's contract work was completed by 5 December.

Certainly, this does not mean that our management structure is something rigid. It is being constantly improved. During the Ninth and 10th Five-Year Plans 147 construction administrations were abolished in association with the consolidation of 11 trusts, the planning functions and bookkeeping were centralized in 24 trusts, and in 2 combines services for providing and completely equipping materials and technology were centralized, enterprises with complete housing and municipal services were formed and construction sections were consolidated. The number of management personnel was substantially reduced. Last year they comprised 14 percent of the total number of workers with 15.4 percent for the USSR Ministry of Construction of Heavy Industry Enterprises as a whole.

However, it must be noted that it is impossible to reduce the management system infinitely. Certain management standards exist. And reductions are planned for us annually, in particular by means of abolishing posts in departments. Now the department staffs have been cut in half in the majority of construction administrations. Let's say four to five people remain in production and technology departments instead of eight to nine and in planning departments two instead of three to four; material and technology supply departments have been abolished altogether. An analogous situation also exists in trusts. Such a practice does not promote an improvement in management. Just the reverse--it weakens the system of trusts and construction administrations, reduces the level of management ability and performance discipline and promotes the loss of qualified personnel from the sector. In addition the annual review and consolidation of the staffs gives rise to uncertainty in the future among workers. It seems that the budget should be enlarged not in this manner but by means of reducing the cost of construction and other measures.

The next stage in improving the management structure, in my view, should be the formation of such construction firms on the basis of combines that would decline the services of other subcontractors and complete all the work themselves from the "foundation to the move in." Or to just draw nearer to this. It is difficult to attain such a position in industrial construction but it is possible in civil and housing construction. It seems expedient to transfer construction organizations that specialize in assembling prefabricated reinforced concrete and metal components in industrial construction and also subdivisions that do electrical, technical, plumbing, and cable work during the construction of housing and social, cultural and everyday structures from the jurisdiction of the USSR Ministry of Installation and Special Construction Work and, in particular, from the Steel Structural Components Administration to our ministry. This would have substantially simplified planning and management and would have eliminated the obstacles when turning over work fronts. What's more this work is technologically associated with general construction work.

While accomplishing the tasks of improving management in the sector that were set by the 26th CPSU Congress, it seems that the organizational structure that has been formed and the function of each subdivision should be carefully analyzed. This is a delicate matter and must be reorganized "on the run" and therefore any mistakes or excesses can become the cause of serious disruptions in production. The achievement of very good end results--the successful fulfillment of the national economic program and putting capacities and structures into operation as quickly as possible--should be the chief criteria here.

9495

CSO: 1821/095

CONSTRUCTION

NECESSITY OF CONSOLIDATING MANPOWER IN CONSTRUCTION DISCUSSED

Ashkhabad TURKMENSKAYA ISKRA in Russian 24 May 81 p 2

[Article by K. Rozykulyyev, administrator of the Chardzhouskaya oblast bureau of USSR Stroybank: "What an Association Provides"]

[Text] In the article "Combined Efforts" which was published in this paper 17 February of this year, the necessity of concentrating manpower and resources in construction and of improving the sector's management to the maximum were discussed. Today, this paper continues the discussion of this important topic.

Chardzhouskaya oblast is now represented by various sectors of the national economy. During the years of the 10th Five-Year Plan large new capacities for producing mineral fertilizers, and food, mixed feed and light industry were put into operation in its territory.

A rise in prices for designs and estimates, low quality work, and an inefficient use of personnel, material and technological resources occurred at several construction sites. Serious deficiencies in capital construction can be explained by the unsatisfactory management of production, and an overextension of manpower and resources not only among numerous structures but by an unjustified large number of subdivisions.

Take for example, the TuSSR Ministry of Construction. To speak frankly, they are not in any hurry to restructure the style and methods of management by the collectives. Instead of centralizing management they are going the way of fragmentation. In our oblast alone four ministry trusts are operating, not counting other administrations and sections. And as was noted in the article "Combined Efforts" these trusts have small capacities. The annual work program completed by their own resources varies from three to five million rubles which is below the "ceiling" of a strong SMU [Construction and Installation Administration].

We would point out that only 10 to 15 years ago the typical trust was conceived of as a large production operations complex with a closed management domain and inconsequential external contacts. With the growth of specialization, service units (mechanization, automotive transportation, industrial enterprises, supply and such) were separated into individual subdivisions.

It seemed that specialization must make things easier and save economists from, as they say, unnecessary troubles. In practice something else came about. Not having their own administrations for mechanized operations, motor pool, reinforced concrete components plants, utility and plumbing columns, that is being without a material and technical base, the "Chardzhoustroy," "Chardzhoukhimstroy," "Gaurdakhimstroy," and "Turkmenvostokneftestroy" trusts have become greatly dependent on subcontractors which has complicated the management of construction work and the life of the collectives themselves.

I would like to give the following example. Ten years ago almost all of the above mentioned enterprises were a part of "Chardzhoustroy." Based on the results of the Eighth Five-Year Plan the trust was awarded a "Medal of Honor" for high production indicators. But as soon as the leading collective was deprived of its material base under the banner of specialization the situation deteriorated quickly. To this day it is numbered among those that are lagging behind.

The second negative circumstance is contained in the process of specialization which was begun, that is, the trend of having the sector to do a maximum amount of work, which has, in a way, slowed down on a half-finished road. Precise boundary lines for the activities of general construction trusts has not occurred. "Chardzhoukhimstroy," "Turkmenvostokneftestroy" and "Gaurdakhimstroy" have been called upon to manage mineral fertilizer and petrochemical structures. They did manage them during the 10th Five-Year Plan. However, during the days when they were under particular pressure the ministry added the "Chardzhoustroy" collective to them. The first months of the 11th Five-Year Plan were marked by a search for work for "Chardzhoukhimstroy," which today is engaged in construction work of the most diverse nature.

Thus, elements of duplication are evident in the trusts' activities. Duplication can be observed in the management organization's operations. It is well known that the efficiency of construction production depends most of all on the organization of labor in the primary links of the production organizational structure--in the crews. The production line personnel are directly responsible for this area--senior construction superintendents, construction superintendents, foremen and crew chiefs. Yet they devote more than one half of the total breakdown of working hours to problems of placing workers, providing them with materials, filling out current documentation, etc. Thirty-five percent is spent on studying designs and estimates and coordinating them at various organizational levels. And only 10 to 15 percent of the time goes to solving long range management problems. Even the leading specialists in construction and installation administrations and trusts are liable to change jobs quite frequently.

And so the categories of engineering and technical personnel listed work, on the one hand, at the crew level, and on the other, repeat one another. Is such duplication needed? Obviously not. And it is possible to eliminate this if the style and methods of managing production are in turn improved.

Further improvement in management must, in our view, be associated with the formation of large construction and installation production associations. There is a real possibility of forming such an association in the territory of Chardzhovskaya oblast on the base of those small trusts that are being spoken about.

The party and government's decrees concerning an improvement in the economic mechanism commit us to this.

In light of these very important party documents the facts that exist concerning the inefficient use of construction capacities, people, technology, etc. are absolutely not permissible. For example, "Turkmenvostokneftestroy's" base was given a work load that utilized their capacities by only 10 percent. At the same time the "Chardzhoukhimstroy" Trust, which was formed, as they say, in a bare spot, is building its own base. Such a trend is also being observed in "Chardzhoustroy." Would it not be better to completely utilize the capacities of already finished plants and shops in Neftezhavodsk rather than waste additional resources to build new ones? It is only the lack of departmental unity within the ministry that should be overcome.

The goal of reducing the cost of management is of no small importance. The administrative system of the Chardzhouskaya trusts in the TuSSR Ministry of Construction is comprised of 261 units with a wage fund of more than 615,600 rubles per year. This is quite a lot if you consider the small annual volumes of construction and installation work that these trusts do with their own resources and the fact that large contract organizations require less expenses for paying management personnel. Along with this the level of its work improves.

At the present time our trusts have 12 current distribution accounts in the oblast office of USSR Stroybank. Twelve of their organizations are obligated to competently fill out 26 forms of bookkeeping reports each. Under an association the number of organizations and types of documents are reduced by half.

And so a construction and installation production association or a large strong trust should become the primary cost accounting link in capital construction as is specified by the decree concerning an improvement in the economic mechanism. It is necessary to concentrate the required material and technological base in their hands, give them subdivisions that are operating in the oblast for automotive transportation, mechanization, plumbing and other work. That is, recreate the management complex that has now been lost.

It goes without saying that reorganization also requires psychological preparation and quite a bit of effort and difficulties must be overcome. One of them is the following. In accordance with the decree an association can be organized with an annual volume of general contract work of no less than 50 million rubles. This indicator was a little bit lower for Chardzhouskaya trusts in 1980--44.2 million rubles. But one should keep in mind that 73 contract organizations in the ministries of construction, agricultural construction, land reclamation and water resources, cotton cleaning, light industry, the navy, communications, transport construction and others are doing capital work in Chardzhouskaya oblast, often of a single type.

In cities, subdivisions of the TuSSR Ministry of Construction are engaged in the construction of schools, hospitals, cultural and educational institutions and in rural locales, the Ministry of Agricultural Construction. The "Chardzhousel'stroy" Trust is erecting farms and livestock complexes. But collectives in the Ministry of Construction are also building agricultural structures. Such duplication could hardly be considered expedient. The "Chardzhousel'stroy" Trust and several other collectives could have painlessly become a part of a territorial construction and installation production association.

The fact that our proposals will seem debatable to some economists is not ruled out. But just the same it deserves attention and detailed study. For it is now time to move on to specific measures for improving capital construction efficiency. Good end results can be achieved not by fragmenting our forces but by combining them.

9495

CSO: 1821/095

CONSTRUCTION

DEFICIENCIES IN BUILDING KISHINEV UNIVERSITY ADDITION ANALYZED

Kishinev SOVETSKAYA MOLDAVIYA in Russian 26 May 81 p 2

[Article by D. Norkin, correspondent of SOVETSKAYA MOLDAVIYA: "Behind the Smokescreen of an Answer Written for Form Only"]

[Text] The start of construction on the new educational building for the humanities faculty in the Kishinev State University imeni V. I. Lenin, which has been awarded the Red Banner of Labor, dates to 1978. According to all existing standards it should already have been accepting students into its auditoriums during the current year. However, the contract organizations in "Grazhdanstroy" Trust in the MSSR Ministry of Construction who were assigned the erection of the structure, have not been in any hurry. At first, SU-5 [Construction Administration-5] tested its strength; they were not able to carry the load and it was necessary to yield the area to SU-6. While assessing how to begin the work, and even whether to begin at all, while they were turning it end over end--time passed. The subcontractor SU-47 in the "Spetsstroy Mekhanizatsiya" Trust No 1 which was charged with cutting open the trench has zealously helped to drag these proceedings on.

For convenience in doing the work the client even resorted to increasing the price of the foundation cycle of work--on the builders' request they allowed a concrete slab to be installed along the entire area of the building's foundation. It did not help. By the end of last year only 214,000 rubles of the estimated cost of 2,530,000 rubles for the classroom building were utilized or 8.4 percent in all....

The situation did not change at the construction site even after this paper's article ("The New Development is Being Delayed" SOVETSKAYA MOLDAVIYA, No 221, 1980).

One should expect that finally, during the current year when the "start of operations" did not take place, the construction site would come to life. But January has passed and what has developed? The SU-6 management planned to utilize 35,000 rubles at the educational building with their own resources. An estimate of manpower for such a volume of work was also made--no less than 31 people must work on the structure. Only five were working if you don't count the foreman. Instead of 35,000 only 3,000 rubles were utilized. They planned to work at the same level in February and March. And the same amount of work was accomplished as in January. As a result only 8.5 percent of the plan for the first quarter was fulfilled.

They increased the plan for the builders to 50,000 rubles per month in April and May and the number of workers correspondingly--to 40 people. However, even today only 10 people in all are working at the site. They utilized only 7,300 rubles in April.

The MSSR Ministry of Higher and Secondary Specialized Education, uneasy about the catastrophic situation at the construction site, sent a letter on 24 March addressed to the MSSR Minister of Construction N. Uzun and the Director of "Grazhdanstroy" Trust N. Vrynchan with the request "to review the situation that has come about and render assistance to ensure that the plan for 1981 is fulfilled and also that the structure be put into use in 1983." As you can see the ministry, having lost their faith in the builders, again made a concession having agreed to the new timetable for completing construction on the building.

They thought for more than 20 days about the composition of the answer to the letter which was signed by the deputy minister and A. Kosolapov, the chief of the "Kishinevstroy" construction and installation production association. What were the arguments that were invented in excusing the contract organization subordinate to him? He did not justify it but rather attacked. It turns out that one of the reasons of the "poor work at the given structure is most of all the insufficient delivery of precast reinforced concrete" and also the delay in demolishing the warehouse, supposedly due to the fact that the conditions do not exist for the normal operation of the tower crane since the swing of the jib is limited; "it is impossible to extend the track under the tower crane and there is no place to store precast reinforced concrete and other materials...."

Does reality correspond to that which is written in the answer?

Let's take just the delivery of reinforced concrete. Neither on the day that the answer was dated nor today, as it turned out, were or are the construction workers being delayed due to this. Based on the testimony of the client and the foremen of SU-6 about 300 cubic meters of reinforced concrete are laying at the structure at the present time. The footings and columns in particular have been completely delivered--their installation was completed just the other day. Collar beams are also laying at the site. Only 30 of the 200 pieces are missing. As to the slabs, there will be no delay due to them, the chief of the trust's UPTK [Administration of Production-Technological Equipment], G. Lukashov, assured us.

"The matter concerns something else entirely," he noted.

We ascertained just what specifically at the construction site. It turns out that SU-47 [Construction Administration-47] and SUM-11 [Construction Installation Administration] for a long time could not in any way complete the preparations for the tracks under the crane and install the first tower crane. And nothing hindered this other than the construction workers' own lack of management abilities. And when the crane was finally installed it became clear that a disruption was permitted due to elementary carelessness--the water was not removed from the track routes, the power cable was not laid correctly, etc. As a result the State Urban Technology Oversight Committee prohibited it to be operated. And the ban was removed only on 11 May. As to the statement that was invented concerning the fact that the warehouse hampers extending the tracks, this also is not true. The tracks were laid the full length.

It is true that the swing of the crane's jib is limited--at one end due to the proximity of a university building and at the other due to the warehouse. But the movement of the crane should hardly be limited in the second case--by order of the client, access by people into the warehouse during the time that the construction personnel are working is forbidden. In addition, it will soon be turned into new facilities.

The warehouse and the storing of the reinforced concrete and other building materials are not a hindrance, in our view. Up to the present time the space that exists has simply not been prepared for them (including the second crane also) as well as approaches to them and motor vehicles drown in the mud in bad weather. And this is in the center of the city!....

As we see the deputy minister's reply to the points that concern the client is severe and categorical. Yet when the topic is about the builders there is a completely different tone.

The association, for example, only promises "to investigate the possibility of putting up the second tower crane" and, when speaking about the "Spetsstroy Mekhanizatsiya" Trust No 1, it reports that it will complete the area under the crane.... Pay attention to the expressions "is being investigated" and "will complete." As if there had been little time before this "to investigate" and "to prepare," as if words had been thrown to the wind at one time and a specific timetable for completing this work had not been promised.

Just visit the structure today and you will be convinced that the area under the second tower crane has not been completed up to the present time. And it has not been completed for the reason that it must be packed down because at one time they dug a trench under the successive auditoriums before it was scheduled in this area despite the client's warning (they say that SU-47 did not have a sufficient volume of work until the plan was ready and it knowingly began worthless work).

However, the pace of construction is being held back not only by the installation of the crane. Before beginning the installation of the collar beams and basement slabs backfilling of the trench has to be done. No less or no more than 1,500 cubic meters of ground is required. At one time SU-47 removed it from the construction site. Now it must be obtained from someplace. It has still not been decided where. In order not to stand around without work SU-6 construction workers, clearly disrupting the technology, are installing the collar beams and the slabs. But this is not saving the situation. It is already clear today that the plan for construction and installation work at this structure will not be completed in May.

Thus, after three years, construction workers have not been able to, as it is called, "crawl out of the earth"--to complete just the building's basement.

In an open letter to the MSSR Minister of Construction N. Uzun and the Director of "Grazhdanstroy" Trust N. Vrynchan, a group of university scientists write about the situation that has come about at the construction site with alarm. They give special attention to the extremely crowded conditions for the educational process due to a lack of facilities.

During the past five years the university has trained 8,800 specialists, including a large number for foreign countries. During that time the number of faculties in the university increased from 14 to 18, departments from 56 to 69 and students from 7,000 to 13,000; the Computer Center, the "Optical Electronics" SKTB [Special Design and Technological Bureau] and a number of laboratories were equipped. And all of this growth is being achieved, in essence, without increasing classroom space. At the present time even with three shifts of classes the university does not have a sufficient amount of auditorium space and seats in the laboratories available.

This is why the scientists emphasize that it is so important to complete construction of the new classroom building as quickly as possible.

Time will tell whether this appeal by scientists will find a response from the administrators of the Ministry of Construction.

9495

CSO: 1821/095

CONSTRUCTION

DEFICIENCIES IN CONSTRUCTION QUALITY CONTROL ANALYZED

Vilnius SOVETSKAYA LITVA in Russian 27 May 81 p 2

[Article by V. Sudzhyus, director of the Lithuanian SSR State Construction Inspection Administration: "When the Primary Links are Weak; Why the Overall System of Controlling Quality in Construction is not Producing the Desired Effect"]

[Text] To the question have you adopted the overall system of controlling quality (KSUK), we hear a positive answer in every large construction organization. How is it so? Where then does so much unfavorable criticism precisely about the quality side of matters come from? This unfavorable criticism is addressed to the majority of construction subdivisions.

I will say straight out--the formation of such a system that would provide high quality products by itself is the "pipe" dream of a bad worker. In reality the KSUK is a very difficult and complicated job requiring that a whole complex of organizational, technical, economic and ideological teaching measures be done every day. This system, as any other, is only effective when all of its links operate harmoniously and with precision. Unfortunately, construction organizations have still not managed to achieve this.

Often the basic principle of KSUK is violated--the principle of a closed chain. It consists of the following. The ministry analyzes the qualitative indicators that have been achieved and, originating with realistic possibilities, usually plans its new subdivisions to be higher. Then trusts and administrations work out specific measures for implementing the programs that are derived and organizes their implementation. Within the established period of time information on the results achieved goes to the ministry. Here it is again analyzed. The reasons that the programs are not fulfilled are analyzed and the necessary assistance is rendered.

But this, so to speak, is in theory. In practice the chain is often broken. In the republic's Ministry of Construction, for example, this process runs like this: trusts, combines, and other subdivisions present information every month about the actual quality indicators to "Orgtekhstroy." They are processed here. Then the summary is given to ministry administrators...for their information. In a word, the matter lacks the necessary analysis and subsequent business decisions at this level, and most of all realistic steps directed toward eliminating the reasons for waste. It goes without saying that the "game with one goal" does not suit low level subdivisions. Therefore, they consider such a "system" nothing more than a burden. And everything would have

come out completely different if the Ministry of Construction's quality control service, by fulfilling the functions to the full degree, entrusted to it by a ministry order, would close the broken chain tightly.

We will now turn our attention to how the KSUK working group in the ministry sees itself when it is called on to solve a problem of great state importance on the sector scale. As surprising as it may be such a group does not exist at the present time. All of the work is done by a single person--B. Pranskunayte, an engineer in "Orgtekhstroy." And, obviously, she can hardly cope with processing the incoming information. B. Pranskunayte simply has no time to occupy herself with an analysis and preparation of measures for controlling quality and, what's more, with checking that it is carried out locally. It is true it was at first planned that the ministry's KSUK working group would consist of five highly qualified specialists. It could be supposed that Deputy Minister of Construction A. Vadshis, under whose command this group should be operating, would still be able to transform it into an authoritative headquarters to fight for improved quality. What is more the Republic Association of Interkolkhoz Construction Organizations is a fairly good example of this.

The KSUK operating agencies in the trusts are not sufficiently strong or authoritative. Usually their functions are entrusted to the construction laboratories under the system of "social work load." And this reminds me of the following episode.

They brought in a concrete truck for the construction of the production building at the "Klayped" Furniture Association. It was intended for laying out the floors. However, the foundation under them was not ready. Resulting from this the director of the trust's construction laboratory, Z. Strigauskas, gave the order to stop pumping concrete. It would seem that everything was correct. But the next morning V. Kinderis, the administrator of the trust, ordered that the ban on pumping concrete be quickly removed, giving the chief of the laboratory to understand in no uncertain terms that otherwise he expects a declaration of his voluntary resignation.

This example speaks convincingly about the necessity of decisively strengthening the KSUK working groups in the trusts, housing construction combines and other subdivisions. They should be freed from other obligations, normal working conditions should be created and matters should be arranged so that their decisions on questions of quality be definitive and unquestioningly implemented.

The KSUK soviets are the highest agency for controlling quality in construction organizations. They are headed by chief engineers. The soviets must review the results of the analyses prepared by the working group and their proposals for improving quality, make decisions and ensure their implementation. Unfortunately, they are still not coping with these functions to a full measure. And what kind of efficiency can one talk about, for example, at the Kaunas housing construction combine, if the KSUK soviet (chief engineer V. Zabela) did not meet once in 1980.

The foremen and construction superintendents--the low level commanders of production--have been given a special role in the overall system of controlling quality. The foundation for the principles of KSUK depends on them--operational control and a non-defective system of labor. Careless approval of work and a non-objective evaluation of it entails with it an incorrect utilization of the funds that are set aside as

additional payments for high quality and false information going to the above mentioned organizations. Numerous facts speak of the weakness in this link of KSUK as well.

Here is an example characteristic of this. A 5-story "K-415" housing unit having 40 variations was assembled with numerous defects in the Sheshkin housing rayon (Vilnius) although the work was done here by an experienced crew under the supervision of one of the best crew foremen in the DSK--V. Ignatavichus, knowing, so to speak, all that is permissible according to the standards by heart. However, the lack of exactingness on the part of construction superintendent K. Mikelenas, knocked this qualified collective, as they say, from the true path. Really, why try if it is such that all work is approved after the first presentation with a high qualitative evaluation and additional payment is made for this in the maximum amounts. Unfortunately, the situation at several other structures being built is no better.

It is well known that a defect in just one crucial part in any mechanism puts it out of commission. By analogy one can in no way expect effective results from the complex overall system of controlling the quality of construction when its basic services operate poorly. The fictitious indicators in the information and accounts create only the illusion of precise functioning and discredits this system. Directors of the ministries and construction organizations must take decisive measures to ensure the energetic work of all the links in the KSUK in accordance with the designs for adopting this system. Only then will its effectiveness be increased.

9495

CSO: 1821/095

CONSTRUCTION

INACCURACIES IN REPORTING LOSSES OF MAN-HOURS DETAILED

Vilnius SOVETSKAYA LITVA in Russian 28 May 81 p 2

[Article by M. Yuz, deputy chief of the Department of Construction and the Construction Industry in the Lithuanian SSR People's Control Committee: "Time Has a Special Kind of Value"]

[Text] "To ensure the full and efficient utilization of working time in each section of production." ("Principal Directions of Economic and Social Growth in the USSR for the Years 1981 to 1985 and for the Period to 1990")

How is working time used in the Kaunas and Shyaulyay construction trusts? In order to answer this question an inspection was made at 60 structures where 87 crews were working, having a total number of about 1,000 workers. It turned out that losses in working time during shifts comprised 15 percent on the average here (19.3 percent in "Kaunasstroy"). This figure was almost twice as high in certain crews. Idle time due to deficits in the materials and technology that are provided to the structures and poor organization of construction production, labor and management are especially substantial. Up to 40 percent of the time lost during shifts was due to these reasons.

At the same time both trusts showed that they had no losses at all in the ledgers for 1980. And so they took and hid the true situation of things, evidently afraid of being justifiably reproached for the poor utilization of one of the basic capabilities of increasing construction production. However, the ledger of the republic's Ministry of Construction for 1980 was also not distinguished by trustworthiness. In all, 88 manhours of idle time during shifts appears in it with 75 of them for "Litbamstroy."

At the same time idle time of almost 5,000 manhours in all were uncovered at the structures by the ministry's central standard inspection station. But they were not registered in the appropriate lists and, as was already said, were not included in the ledger. In addition, half as many photographs were made by this station during the working day in 1980 than in 1979.

Hidden losses of time (non-productive losses of labor) are also great in the construction organizations. In many cases they are associated with the use of low efficiency operating methods, not providing structures with the machinery and mechanisms needed, violations of the technology and correcting defects. For example, hidden losses of work time comprised more than 300,000 manhours in 1980 in "Kaunasstroy" Trust.

The number of failures to report for work is also substantially reduced in the book-keeping. For example, if one is to believe the data that were presented by "Kaunasstroy," they comprised 3,388 man days for the trust in 1979 and 2,278 man days in 1980--or they were reduced by a third. Failures to report for work were really substantially higher. For example, "Kaunasstroy's" SU-1 [Construction Administration-1] showed 139 failures to report for work in the ledger for 1979 and 208 for 1980, while they were established to be 307 and 420, respectively, by the inspection. The situation in other subdivisions of the trust is no better.

An analogous picture has taken shape in Shyaulay, also. Judging from the ledger, construction workers at the local trust failed to report for work 875 times in 1980. Meanwhile, in SUOR-5 [Specialized Administration for Finishing Work] alone it proved to be twice as high. The actual losses of work time due to failures to report for work when calculating per worker comprised 9 days in this administration instead of 0.6 days as appeared in the ledger.

The incomplete utilization of the work day inflicts a great loss on production. For example, about 6,000 manhours were lost in 1980 for this reason alone in the Shyaulay Construction Trust's SU-1. The failure to report to work with the administration's permission has become a real evil in many construction organizations. The losses associated with this are hidden in every way possible in the ledgers. For example, on the orders of the chief of SU-1 (Shyaulay Construction Trust) 19 workers were registered as applying for vacation in 1980 for 65 man days in all. At the same time, marks for an additional 16 man days were made on the timekeeper's log without the necessary justification for it. Based on an inspection of the timekeeper's log it was established that failures to report for work in SU-6 of this same trust with the administration's permission comprised 109 man days in 1980 and only 76 were registered by orders. Quite a few facts were hidden when orders for allocating unpaid leave are issued after an employee does not come to work, which in essence is concealing a failure to report to work.

Tallies show that eliminating just the losses of work time that were considered in the two construction trusts that were the topic of the above discussion would have made it possible to complete additional construction and installation work in the amount of 11 million rubles in 1979-1980. During the course of the inspection it was revealed that serious deficits in accounting and control do not make it possible to evaluate the actual potentials for improving the use of work time and uncover and eliminate the reasons for its loss, which leads to an incorrect evaluation of the activity of construction organizations (for this indicator).

The Lithuanian SSR People's Control Committee, having discussed the above question, required that the republic Ministry of Construction implement effective measures for eliminating the defects that were uncovered by the inspection. For the lack of necessary control over the efficient use of labor resources, for the conciliatory attitude to the directors of the subdepartmental organizations who permitted great losses of work time and for the facts of hiding them from registration, the administrator of the Shyaulay Construction Trust, comrade Gasyunas, the first deputy administrator of the "Kaunasstroy" Trust, comrade Simaytis and the chief engineer of this trust, comrade Augutis were severely punished.

Patrol groups are called upon to play an important role in the battle against losses in work time. At the construction sites, problems related to preparing working places, improving the organization of labor and everyday conditions, strengthening labor discipline and ensuring the objectivity of the accounting data concerning losses in work time must be under their constant control. To efficiently use each working minute means to put an important potential for increasing the efficiency of social production into action and for successfully achieving the programs that were set for the 11th Five-Year Plan by the 26th CPSU Congress.

9495

CSO: 1821/095

CONSTRUCTION

UDC 728.004.48

RESOURCES ALLOCATION DISCUSSED

Kiev STROITEL'STVO I ARKHITEKTURA in Russian No 6, Jun 81 (signed to press 2 Jun 81)
pp 17-18

[Article by Candidate of Technical Sciences E. I. Shilov and Candidate of Economic Sciences S. Ye. Kruglyak: "Evaluating the Resources-Intensiveness of Design Resolutions"]

[Text] The party and government pay constant attention to reducing the resources-intensiveness of branches of the country's economy, including construction. The report by Comrade L. I. Brezhnev at the 26th CPSU Congress noted that, given the acceleration of scientific and technical progress and changeover of the economy to an intensive path of development in the 11th Five-Year Plan, the more effective use of the country's production potential requires economizing in every way possible on all types of resources, improving work quality and the efficient use of capital investments.

An important role is given to planning in increasing capital investment effectiveness in construction. The quality of construction projects, material- and capital-intensiveness, labor expenditures on putting it up and other items are determined in the planning process.

In standard designs, the structural and prefabricated-layout resolutions of a construction project are chosen and its estimated cost, labor-intensiveness and building materials and components requirements are shaped. When the design is tied in to local conditions, the final material- and capital-intensiveness indicators of the project being planned are determined.

An analysis of the specific estimated cost of rural sectioned houses of various construction and structural types (using standard designs) which was made by the economics laboratory of the Ukrainian SSR Gosstroy's Ukrniipgrazhdansel'stroy Institute testifies to the presence of substantial deviations in estimated cost per square meter of total area from the average level for various standard designs. These deviations are 6-7 percent for brick buildings and 7-8 percent for prefabricated slab and panel housing.

The data presented bear out the fact that there are reserves for lowering estimated cost in the standard designs studies, that far from all opportunities have been used for increasing the effectiveness of design resolutions.

The materials-intensiveness of standard rural housing designs was also evaluated. Here, the coefficient of variation of specific expenditures of basic building materials for brick-wall housing was 6.4 percent (cement) and 8.4 percent (steel).

How can the labor of designers at various stages of design development be evaluated? Such an evaluation is possible by comparing the technical-economic indicators of the completed project design with the normative or reference indicators.

Materials-intensiveness is evaluated by comparison with a normative base in the form of current "Norms of Materials and Items Expenditure per 1,000 m² of Total Housing Space, Adjusted" (SN 445-77) and "Norms of Materials and Items Expenditure Per Million Rubles of Estimated Construction-Installation Work Cost in Building Public Health, Education, Cultural and Sports Facilities" (SN 256-77) approved by the USSR Gosstroy and USSR Gosplan. These norms record materials and items expenditures for construction-installation work and for the following:

- installation of temporary buildings and structures if expenditures on them are included in summary estimates for the construction;

- work done under overheads;

- additional work on electrical and sanitary engineering and on installing reinforced concrete and steel structures and equipment;

- linking standard building designs to local construction conditions;

- extension of utilities and erection of additional projects within apartment complexes;

- adding on or building in stores and other nonhousing facilities.

Existing normative documents lack generalized data on materials expenditures on a building using a standard design. A normative evaluation of materials-intensiveness in this instance requires clearing the normatives of the tie-in to local conditions, that is, reducing them by a conditional value which approximately reflects the difference between expenditures of materials under the standard design and under the design linked to local conditions. Such an approach to normative evaluation of materials-intensiveness in standard planning is somewhat conditional in nature and dictates the necessity of developing norms of building materials and items expenditures for designs used in standard planning, since 80-90 percent of the construction demand for materials and components is shaped in this stage of the planning.

In this connection, the Gosgrazhdanstroy attached to the USSR Gosstroy approved in 1976 "Control Indicators of Metal Expenditure in Housing Designs of Various Structural Types" and "Control Indicators of Metal Expenditure in Steel, kg/m² of Total Space, for Public Building Designs of Various Structural Types," which permitted a normative evaluation of newly developed design resolutions for housing and civil construction products, given standard planning only in terms of steel expenditure.

There are no such normative data for other indicators of project resources-intensiveness. Specific cost indicators for analogous designs or consolidated estimate normatives and price lists can be used for a normative evaluation of estimated cost.

However, all the diverse conditions and characteristics of the project being planned can be reflected as they are linked to the basic indicator of estimated construction cost on the basis of economic-mathematical modeling of that indicator. Such a model might become a multipurpose normative for evaluating the estimated cost level at all stages of planning.

The Economics Laboratory of the Ukrniipgrazhdansel'stroy Institute used economic-mathematical methods and computers to develop a model of specific estimated cost of rural sectioned brick-wall, large-panel lightweight concrete and panel houses, as well as of individual houses.

The model of specific estimated cost is a linear combination of factors shaping the final indicator (estimated cost of the project being planned) and takes the general form:

$$y = a_0 + a_1 \cdot x_1 + \dots + a_n \cdot x_n = \sum_{i=1}^n a_i \cdot x_i ,$$

where y is the cost per square meter of total housing space, in rubles;

$x_1, x_2 \dots x_n$ are volume-layout housing indicators which exert the most substantial influence on its estimated cost;

$a_0, a_1 \dots a_n$ are regression factors.

The models developed for specific estimated cost of housing with different structural resolutions enable us to evaluate the results of designers' labor at all planning stages and can be used:

in the preplanning stage, to forecast estimated housing cost;

in the planning process, to seek out an optimum design resolution variant;

after development of the design, for normative evaluation of the standard building design developed.

One can familiarize himself with the parameters of economic-mathematical models of the specific estimated cost of rural housing in the Laboratory of Economics of the Ukrniipgrazhdansel'stroy Institute.

After development of the design is complete, a normative evaluation of estimated project cost done by comparing estimated cost under the standard design with the cost calculated in the preplanning stage on the basis of the model enables us to determine the size of the economic impact obtained from the economical design resolutions developed by the designer.

The normative evaluation method described for determining estimated project cost on the basis of models can, as has already been noted, be successfully used in the standard planning process. In the stage of tying a standard design in to local conditions, normatives of specific capital investments which take into account the additional expenditures connected with tying the design in to local conditions are proposed for normative evaluation of estimated project cost (see Table, following page).

The development of specific capital investment normatives takes into account the status and cost of construction of housing, cultural and personal-services projects in the republic, local national, living, natural and climate conditions, use of new and progressive standard designs for rural construction, and use of the achievements of scientific and technical progress.

Specific capital investments are calculated per unit of power (capacity) of the projects and contain the specific cost of construction-installation work, equipment and other expenditures connected with construction: site preparation, increased costs in winter, technical inspection, erecting temporary buildings and structures, planning work, and others. The specific capital investment normatives developed have been agreed to by the Ukrainian SSR Gosplan and can serve as a base for evaluating the estimated cost level obtained as a result of tying in a standard design to local conditions. The use of normative evaluation in planning will facilitate improving the quality of design work and increasing design economy. The simplicity, clarity and reliability of the methods presented here for normative evaluation in planning rural housing and civil construction projects permit recommending them for use in planning the most diverse types of projects.

construction project	unit of power (capacity) measurement	specific capital investments per unit of measurement adopted, in rubles (by Ukrainian SSR region)			
		Ukrainian SSR as a whole	Donetsk-Dnepr	Southwest	South
housing	1 m ² of total space	174.8	176.9	175.0	171.8
palaces of culture	1 place	1,203.2	1,114.1	1,083.9	1,394.1
clubs	"	800.5	845.0	821.3	730.8
schools	1 student	1,069.6	1,123.9	1,054.3	982.1
boarding school swimming pools	1 place	1,769.4	1,864.0	1,326.9	2,021.8
administration buildings	1 workplace	4,492.5	4,704.0	4,132.1	5,136.6
hospitals with polyclinics	1 m ² of work space	416.2	25.6	344.4	431.0
therapy centers	1 bed-place	6,370.2	6,374.4	6,398.5	6,096.6
rural out-patient clinics	1 visit	1,601.7	1,601.7	1,601.7	1,601.7
physicians-assistant obstetrics centers	"	1,239.8	1,239.8	1,239.8	1,239.8
pharmacies	1,000 prescriptions	1,138.0	1,139.9	1,114.1	1,187.7
stores	1 workplace	9,421.2	7,528.1	10,457.6	8,459.8
dining halls	1 seat	1,561.1	1,465.3	1,594.8	1,760.1
baths	1 bathing place	2,226.7	2,479.8	2,606.2	2,100.7
baths with barber shops	1 m ² of work space	375.5	418.5	326.9	337.9

COPYRIGHT: Izdatel'stvo "Budivel'nik", "Stroitel'stvo i arkhitektura", 1981

11052

CSO: 1821/106

CONSTRUCTION

BRIEF

PUMPS FOR AESS--The collective of the Semy Machine Building Association imeni Frunze has begun to manufacture the first model of a main circulating pump intended for atomic energy. Its capacity is 20,000 cubic meters of water per hour. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 22 May 81 p 2] 9495

CSO: 1821/095

END

END OF

FICHE

DATE FILMED

1 Sept. 1981